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**EXPLANATION OF SIGNIFICANT DIFFERENCES  
WILLIAM DICK LAGOONS SUPERFUND SITE**

**I. INTRODUCTION**

Site Name: William Dick Lagoons Superfund Site  
Site Location: West Caln Township, Chester County, Pennsylvania  
Lead Agency: U.S. Environmental Protection Agency, Region III  
("EPA" or "the Agency")  
Support Agency: Pennsylvania Department of Environmental  
Protection ("PADEP") (formerly the Pennsylvania  
Department of Environmental Resources)

**Statement of Purpose**

A Record of Decision ("ROD II") for the William Dick Lagoons Superfund Site ("Site") was signed on March 31, 1993.<sup>1</sup> This Explanation of Significant Differences ("ESD") is issued in accordance with Section 117(c) of the Comprehensive Environmental Response, Compensation and Liability Act, as amended by the Superfund Amendments and Reauthorization Act of 1986 ("CERCLA"), 42 U.S.C. § 9617(c), and 40 C.F.R. § 300.435(c)(2)(i). This ESD has been prepared to provide the public with an explanation of the nature of the change made to the selected remedy for the clean up of contaminated soil identified in ROD II; to summarize the information that led to the making of the change; and to demonstrate that the revised remedy complies with the statutory requirements of CERCLA § 121, 42 U.S.C. § 9621. The remedy change does not fundamentally alter the remedy or performance of the remedy, and therefore a ROD amendment is not required. This ESD is incorporated into the Administrative Record for the Site.

**II. SUMMARY OF THE SITE HISTORY, SITE HISTORY, AND  
SELECTED REMEDY**

The William Dick Lagoons Site (the "Site") is located in West Caln Township, Chester County, Pennsylvania approximately 3.5 miles south-southeast of the Village of Honey Brook. The 4.4 acre Site is located within a larger 105-acre parcel of land and is situated in a rural wooded setting on the crest of a small ridge known as the Baron Hills. The nearest residence is located roughly 300 feet to the north of the Site and approximately thirty homes are within 1000 feet of the Site.

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<sup>1</sup> ROD II addresses Operable Unit ("OU") No. 3, soil contamination, at the Site; ROD I, issued on June 28, 1991, addressed OU Nos. 1 and 2 at the Site.

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Waste disposal activities at the Site were conducted by its former owner, Mr. William Dick, in the late 1950s through May 1970. Originally, the Site consisted of three unlined earthen lagoons or ponds, designated as lagoons nos. 1, 2, and 3, that were used for the disposal of wastewater. The lagoons covered approximately 2.2 acres of the 4.4 acre site; the remaining 2.2 acres served as a borrow area for the soil used to construct the compacted earthen ridge and berm around the perimeter of the lagoons.

The lagoons were used to dispose of final rinse waters from the interior cleaning of tank trailers owned by Chemical Leaman Tank Lines, Incorporated ("CLTL"). Trichloroethylene ("TCE") was used to clean out the tank trailers. In addition, residual chemical products were occasionally disposed of in the lagoons. The tank trailers were used for transporting petroleum products, latex, and resins. Following the rinsing and cleaning of the tank trailers at CLTL's Downingtown, Pennsylvania facility, the rinse water was delivered to the lagoons by tanker approximately every three days for disposal.

CLTL completed Remedial Investigation ("RI") and Feasibility Study ("FS") reports on September 6, 1990. During the RI/FS, CLTL estimated that approximately 24,000 cubic yards of soil were contaminated at the Site. The primary soil contaminants include trichloroethylene ("TCE"), 2-butanone, toluene, styrene, xylene, ethylbenzene, chlorobenzene, tetrachloroethylene, phenol, 1,2,4-trichlorobenzene, naphthalene, bis(2-ethylhexyl) phthalate and DDE (1,1-dichloro-2,2-bis(4-chlorophenol)-ethane).

On June 28, 1991, EPA issued a Record of Decision for Operable Units No. 1 (alternative water supply) and No. 2 (groundwater) at the Site. The major components of the remedies selected included (1) an extension of the existing water supply to homes impacted or potentially impacted by the Site and, (2) a hydrogeological study and an interim groundwater pump and treat system to remove site-related contaminants from the groundwater. EPA deferred a decision regarding soil remediation (Operable Unit No. 3) until a soil vapor extraction/bioremediation ("SVE/BIO") treatability study and focus feasibility study was completed by CLTL. The results of the SVE/BIO treatability study indicated that significant quantities of volatile organic compounds ("VOCs") could be removed, however, it was not conclusively demonstrated that bioremediation (BIO) could effectively reduce levels of VOCs and semi-volatile organic compounds ("SVOCs"). This was attributed to the short duration (approximately six weeks) of the study conducted. Also, during the treatability study, thin layers of a black, sticky, fibrous substances ("tarry layer") were identified in lagoon No. 1 at depths of 2 to 6 feet. Analysis of this material indicated that it contained the VOCs and SVOCs found in the soil. The impact of this layer on the operation of the SVE/BIO remediation was not evaluated.

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Therefore, additional studies were deemed necessary to evaluate the overall effectiveness of the SVE/BIO technology.

On March 31, 1993 issued a Record of Decision ("ROD II") for Operable Unit No. 3 at the Site. ROD II included the following components:

1. Additional sampling to further determine the extent of soil contamination.
2. Excavation of contaminated soils and treatment of contaminated soils in an on-site thermal desorption unit.
3. Treatment of air emissions from the thermal desorption unit.
4. Management and off-site disposal of treatment residuals and wastewater.
5. Backfilling of treated soils in the excavated areas and placement of a vegetative soil cover or multi-layer cap over such areas.
6. Operation and maintenance ("O&M") of the vegetative soil cover or multi-layer cap.
7. Institutional controls in the form of deed restrictions.

### III. DESCRIPTION OF SIGNIFICANT DIFFERENCES AND THE BASIS FOR THOSE DIFFERENCES

EPA has determined that a change in the remedy as set forth in ROD II is warranted. This change is a significant change as defined in 40 C.F.R. §300.435(c)(2)(i), the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"), therefore, preparation of this ESD is required. A ROD Amendment is not required because the change only affects a portion of the contaminated soil at the Site, the soil cleanup standards and the level of required soil remediation remain the same, and, if the proposed alternate technologies do not achieve the ROD II soil cleanup standards within the specified time frames, then the thermal desorption technology, as specified in ROD II, will be implemented.

### A. Description of the Change

ROD II specified that the contaminated soil<sup>2</sup> at the Site would be remediated using thermal desorption treatment technology.

CLTL has committed to remediate the upper soil and tarry layers as specified in ROD II by using thermal desorption treatment technology. EPA will allow CLTL to attempt to remediate the underlying soil using either SVE/BIO and/or hot air vapor extraction ("HAVE") technology.

Specifically, CLTL will conduct a nine-month full-scale pilot study for a SVE/BIO remedy on the underlying soil. If the study demonstrates that SVE/BIO can achieve the soil cleanup standards specified in the ROD, EPA will allow CLTL to complete the remedy for the underlying contaminated soil using the SVE/BIO technology. The SVE/BIO remediation of the underlying soil will then be required to be completed within 9 months of the commencement of the operation. If the results of the nine-month pilot study indicate that the ROD II soil cleanup standards cannot be achieved using the SVE/BIO technology, then CLTL will be allowed to conduct a three-month pilot study using HAVE treatment technology. If the three-month HAVE study indicates that the clean-up standards specified in ROD II can be achieved using the HAVE technology, CLTL must complete the remediation using the HAVE treatment technology within 12 months of commencement of the operation. If the three-month HAVE study indicates that the ROD II soil cleanup standards cannot be achieved using the HAVE technology, or either the SVE/BIO or HAVE remediations are completed and the soil cleanup standards specified in ROD II are not achieved, then thermal desorption treatment technology, pursuant to ROD II, will be implemented.

If the SVE/BIO technology is able to achieve the clean-up standards, then the time frame for the implementation of the remedy for OU-No. 3 will not significantly change. A more detailed discussion of the effects that this ESD will have on the clean-up schedule is discussed in Paragraph III.B.2, below.

To summarize, this ESD addresses only the remediation of the contaminated underlying soils of Operable Unit No. 3 at the Site.

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<sup>2</sup>The contaminated soil at the Site has been divided into three layers, the upper soil, the tarry layer, and the underlying soil. The "tarry layer" is a sludge-like tarry material located approximately 10 feet below the ground surface in the vicinity of the former lagoons. The soil layer that is located above the tarry layer is referred to as the "upper soil." The soil that is located below the tarry layer is referred to as the "underlying soil."

It allows CLTL to evaluate the use of SVE/BIO and/or HAVE technologies to remediate the contaminated underlying soils to the clean-up standards specified in ROD II. It should be noted that the soil clean-up standards specified in ROD II are not being changed.

## **B. Rationale for the Change**

EPA has made the determination that a change to ROD II is needed, and that implementation of the remedy as described above could expedite the cleanup of the Site and avoid prolonged and complicated litigation based on the information and facts described below:

### **1. Performance**

The change in the remediation process will not affect the final cleanup level of the underlying soil at the Site. The soil cleanup standards as specified in ROD II are not modified by this ESD. If the SVE/BIO and/or HAVE technologies cannot achieve the cleanup standards then the thermal desorption treatment technology, specified in ROD II, must be implemented. ROD II did, however, consider the possibility that the use of thermal desorption would not achieve the cleanup standards. In that case, ROD II discusses design of a multi-layer cap to limit the amount of rainwater and surface water infiltration through the contaminated soils remaining in the ground so that the leaching of contaminants from the soil to the ground water is reduced to MCLs or health based levels, and the possible modification of cleanup standards in accordance with the NCP. The implementation of a cap will still be considered but only after thermal desorption technology has been applied by CLTL to all soils at the Site.

One benefit of this change to the remedy is that the underlying soil can be remediated in situ (in place with minimum disturbance). This will minimize the possible generation of fugitive dust emissions by reducing the amount of excavation, soil movement, and stock piling of treated soil on the Site during the excavation portion of the remediation process.

### **2. Timing**

ROD II estimated a duration of approximately 25 months to implement the thermal desorption treatment remedy as originally proposed.

It is difficult to estimate the time needed to implement the revised remediation approach because there are several contingencies built into the proposal. Based on the most recent scheduling information provided by CLTL, if the proposed SVE/BIO treatment technology can achieve the target cleanup levels and is

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implemented, it would take approximately 27 months to implement the remedy. This would include about a nine month implementation period for the thermal desorption portion of the remedy. This 9 month thermal desorption duration is shorter than ROD II estimated for thermal desorption at the Site because much less soil will be treated with the thermal desorption process under the revised ROD II approach. The SVE/BIO treatment portion of the remedy is expected to include the nine month full-scale pilot period and another nine months to complete the remediation process for a total additional period of 18 months. Therefore, if the SVE/BIO is successful, the duration of the remedial action will not significantly change. However, if the SVE/BIO is not successful, then additional time will be needed to make a transition to the HAVE treatment technology and/or thermal desorption.

### 3. Costs

The ROD estimated that full site remediation using thermal desorption technology could cost \$7.8 million to \$9.3 million. The current estimate for the combined thermal desorption - SVE/BIO remedy is approximately \$3.5 million. The proposed combined remedy could result in a cost savings of up to \$5.8 million.

## VI. PUBLIC PARTICIPATION

The ESD and the information upon which it is based will be included in the Administrative Record file and the information repository for this Site. The Administrative Record is available for public review at the locations listed below:

U.S. EPA, Region III  
841 Chestnut Building  
Philadelphia, PA 19107  
Hours: Mon. - Fri., 9:00 a.m. - 4:00 p.m.

West Caln Township Municipal Building  
Route 340, Kings Highway  
Wagontown, PA 19376

Questions concerning EPA's action and requests to review the Administrative Record should be directed to:

Patrick McManus  
Remedial Project Manager (3HW21)  
U.S. EPA - Region III  
841 Chestnut Building  
Philadelphia, PA 19107

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**VII. SUPPORT AGENCY COMMENTS**

EPA has notified the PADEP of the changes proposed in this ESD in accordance with 40 C.F.R. § 300.435(c)(2). By letter dated September 21, 1995 from Ms. Carol Collier, PADEP Regional Director to Mr. W. Michael McCabe, EPA Regional Administrator, PADEP informed EPA that it concurs with this ESD. Furthermore, PADEP also informed EPA that it now concurs with the ROD II with which it had previously declined to concur.

**VIII. AFFIRMATION OF THE STATUTORY DETERMINATIONS**

EPA has determined that the revised remedy complies with the statutory requirements of CERCLA § 121, 42 U.S.C. § 9621. Considering the new information that has been developed and the changes that have been made to the selected remedy, EPA believes that the remedy remains protective of human health and the environment, and complies with Section 121(d) of CERCLA, 42 U.S.C. § 9621 (d) and EPA's Off-Site Policy and is cost-effective. In addition, the revised remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this Site.

12/6/95  
Date

  
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Thomas C. Voltaggio, Director  
Hazardous Waste Management Division

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